

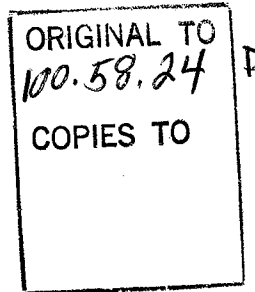


CH2MHILL

CH2M HILL
One Dayton Centre
Suite 1100
One South Main Street
Dayton, OH 45402
Tel 937.228.3180
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December 22, 2004

181174



DEC 28 2004

Mr. Donald Heller
USEPA Region 5
DW-8J
77 West Jackson Blvd.
Chicago, IL 60604-3507

Subject: Technical Memorandum Addressing Conditions at the SWMUs and AOCs
Specified in the PA/VSI Report - EMD Chemicals Inc. Norwood Facility

Dear Don:

On behalf of EMD Chemicals Inc. (EMD), CH2M HILL is submitting the enclosed Technical Memorandum outlining the conditions at the SWMUs and AOCs specified in the Preliminary Assessment/Visual Site Inspection (PA/VSI) report. PRC Environmental Management Company (PRC) on behalf of the U.S. EPA performed the PA/VSI in August 1990 and prepared the report. This submittal completes EMD's requirements under Section V(B)(1) of the Voluntary Corrective Action Agreement, executed on September 23, 2004.

Two issues are identified in the technical memorandum that EMD requests the U.S. EPA to address as follows.

- EMD believes that the tank farm and tanker transfer area newly constructed in 1989 was incorrectly determined to be a SWMU (SWMU-4). This area was designated as a SWMU by PRC in the PA/VSI as a result of the potential for product to be released and be subsequently contained by the spill containment system. The spill and containment system is not an active management unit for solid waste. Therefore, EMD requests that the U.S. EPA declassify this unit as a SWMU.
- Per the request of the U.S. EPA, the Ohio EPA performed an inspection of a greater than 90-day storage area (designated as SWMU-2 in the PA/VSI) on October 17, 1982. Subsequently, the Ohio EPA recommended closure approval of the greater than 90-day hazardous waste storage facility (SWMU-2) and a re-designation of the facility to non-TSD generator in an October 20, 1982 letter to EMD Chemicals (with copies to U.S. EPA RCRA personnel and the Regional Administrator). A letter acknowledging completion of the requirements of the closure plan and subsequent issuance of closure status for the greater than 90-day storage area has not been received by EMD from the U.S. EPA. To complete the

Donald Heller
U.S. EPA, Region 5
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documentation of unit closure, EMD respectfully requests that the U.S.EPA submit a letter documenting the closure of SWMU 2 as a greater than 90-day hazardous waste storage area.

Please call me at (937) 228-3180 ext. 233 if you have any further questions.

Sincerely,

CH2M HILL



Mark Altic
Project Manager
Attachment



Katherine Arnett
VCAA Project Manager

CC: Paul Nelson - EMD
Kevin Kallini - TPF

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Communications\Transmittals\EMD SWMU AOC

Technical Memorandum

EMD Chemicals Inc. Norwood, Ohio Facility

Current Status of Solid Waste Management Units and Areas of Concern

December 22, 2004

Introduction

The EMD Chemicals facility is located at 2909 Highland Avenue, Norwood, Ohio (f/k/a EM Science). The facility has been involved in manufacturing, storage, and distribution of organic and inorganic chemicals since 1952. The facility was purchased by Merck, KGaA (the parent of EMD Chemicals) in 1977. In August 1990, PRC Environmental Management, Inc. (PRC) performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and/or likelihood of releases from solid waste management units (SWMUs) and other areas of concern (AOCs) at the facility.

The PA/VSI was conducted on the behalf of the U.S. Environmental Protection Agency (U.S. EPA) to assist the agency with prioritizing facilities for RCRA corrective action. A report presenting the findings of the PA/VSI was prepared by PRC on December 3, 1990 (PRC, 1990). The report concluded that hazardous constituents have been released to soil, ground water, and surface water as the result of operations that took place prior to EMD Chemicals purchasing the facility.

On December 24, 1992, EMD Chemicals entered into an Administrative Order on Consent with the Ohio Environmental Protection Agency (Ohio EPA) to conduct a remedial investigation/feasibility study (RI/FS) following CERCLA guidance and an Ohio EPA Statement of Work (prepared by OEPA). The work plan for the RI/FS (prepared by EMD) took into account the findings of the PA/VSI, and EMD Chemicals investigated the nature and extent of contamination at SWMUs and AOCs locations where PRC had identified that a release had occurred in the past, along with investigations performed in other areas on and off of the facility (Payne Firm, 1993).

The Consent Order between EMD Chemicals and the Ohio EPA was satisfied on December 3, 2004. The remedial investigation for the facility defined the nature and extent of contamination at the facility, and unacceptable risks to human health and the environment identified at that time (Payne Firm, 1996). The feasibility study also identified the potential remedial alternatives for the facility (Ohio EPA, 2004).

On September 23, 2004, EMD Chemicals signed a RCRA Voluntary Corrective Action Agreement (Agreement) with the U.S. EPA. Section V.D(7) of the Agreement stated that existing data developed by EMD Chemicals under Ohio EPA Consent Order is appropriate and sufficient to identify, characterize and delineate the nature and extent of hazardous waste and hazardous constituents on and off of the facility, and to determine the need for and design of any corrective measures for the facility (as part of a Final Remedy).

Section V. B(1) (RCRA Facility Investigation) of the Agreement requires EMD Chemicals to prepare a brief technical memorandum to address conditions at the SWMUs and AOCs specified in the PA/VSI report that may not have been specifically addressed under the Ohio EPA's 1992 Consent Order (i.e. RI/FS); in addition to newly discovered SWMUs or AOCs. This technical memorandum addresses these two issues identified above and concludes that all SWMUs and

AOCs were sufficiently identified and characterized during the RI/FS, and that there are no newly discovered SWMUs or AOCs that need to be investigated or characterized.

Mary Backherms, Environmental Affairs Coordinator, and Rob Highley, Hazardous Waste and Health and Safety Manager, of EMD Chemicals Norwood, Ohio Facility were interviewed to assist in documenting the information required for this Technical Memorandum.

Regulatory History

In 1980, a Part A permit application for the present facility was submitted to the Ohio EPA under the name MCB Manufacturing Chemists, Inc. (PRC, 1990). After the permit was submitted, the following occurred to close a greater than 90-day hazardous waste storage area (SWMU 2) so that the facility change could change its status to generator only:

- EMD Chemicals submitted a modified application in 1982 bearing the name EM Science, a Division of EM Industries, Inc. This was a change in name and legal identity.
- EMD Chemicals notified the U.S. EPA on July 2, 1982, and the Ohio EPA on July 15, 1982, of its intent to change to generator only status (PRC, 1990). A closure plan for the main hazardous waste storage area at the facility (SWMU 2) was submitted to the U.S. EPA on August 17, 1982, and to the Ohio EPA on September 10, 1982.
- On September 3, 1982, the U.S. EPA informed EMD Chemicals that they had reviewed the closure plan and had requested that the Ohio EPA inspect the facility to verify that hazardous wastes were properly managed during the closure of the storage area so that the status of the facility could be changed to that of generator only. As a result, the Ohio EPA conducted a closure inspection on October 19, 1982.
- After conducting the inspection, the Ohio EPA recommended approval of the closure of the hazardous waste storage facility and a re-designation of the facility to non-TSD generator in an October 20, 1982 letter to EMD Chemicals (with copies to U.S. EPA RCRA personnel and the Regional Administrator). A copy of the October 20, 1982 letter is attached. A letter acknowledging completion of the requirements of the closure plan and subsequent issuance of closure status for the area has not been received from U.S.EPA by EMD. However, the Facility was re-designated as a non-TSD generator.
- SWMU 2 was converted after closure to a less than 90-day storage area. The facility is currently operating as generator only.

Summary of SWMUs and AOCs

Figure 1 presents the locations of each SWMU and AOC at the Facility and Table 1 presents a description of each SWMU and AOC at the facility, dates of operation, and any evidence of a release of hazardous constituents as documented in the PA/VSI (PRC, 1990). The table also indicates the current regulatory status of each unit or area, and if investigation or remedial action is anticipated during the RCRA Corrective Action. One additional less than 90-day hazardous waste storage area was put into operation by EMD Chemicals after the 1990 PA/VSI (SWMU 11). This unit is active as shown on Table 1.

As early as 1982, remedial investigation activity at the facility led to the implementation of several interim measures by EMD Chemicals to mitigate the off-site migration of hazardous

constituents emanating from some of the SWMUs and other areas at the facility. EMD Chemicals also made modifications and upgrades to its storm water collection system, and operated a ground water capture well (P6A) and other interim measures to prevent hazardous constituents from migrating off of the property. Three of these interim measures are currently in place and operating and their effectiveness is being monitored during the RCRA voluntary agreement process. Capture well P6A is in place but is not currently operating since quarterly monitoring of ground water contaminants indicates migration to the eastern property boundary above a level of concern is not occurring.

The current status of identified SWMUs and AOCs presented on Table 1 is summarized below:

- SWMUs 1 through 3, and SWMU 5 and 11 are active units related to facility operations associated with chemical manufacturing, chemical waste storage, and interim site remediation measures. Four of the units are currently in operation and in compliance with applicable regulatory regulations. SWMU 1 (Building 4 Hazardous Waste Storage Area) was taken out of operation in 1991. There was no evidence of a release of hazardous wastes or hazardous constituents from SWMUs 1 through 5 documented in the PA/VSIs (PRC, 1990). As mentioned above, SWMU 11 was put into operation in 1994 after the PA/VSIs were completed. There is no need to investigate or remediate any of these units during the RCRA Corrective Action. As previously discussed, a formal notice of closure for SWMU 2 has not been received from the U.S.EPA.
- SWMU 4 includes a tank farm and tanker transfer area newly constructed in 1989. This area was designated as a SWMU by the Ohio EPA in the PA/VSIs as a result of the potential for product to be released and be subsequently contained by the spill containment system. The spill and containment system is not a management unit for solid waste. Therefore, EMD requests that the U.S. EPA declassify this unit as a SWMU.
- SWMUs 6 through 9 are related to past facility operations where releases of hazardous constituents occurred that may have contributed to soil and ground water contamination beneath the facility, and off of the facility. With the exception of the East Ravine French Drain IM system, all of these units were taken out of operation (removed or abandoned in-place by sealing) by EMD Chemicals or previous owners of the facility prior to 1990. The investigation, characterization, and delineation of contaminated media associated with the use of these SWMUs were conducted during the Ohio EPA Consent Order remedial investigation (Payne Firm, 1996). A requirement of the voluntary action Agreement is for EMD Chemicals to submit a Corrective Measures Proposal to the U.S. EPA outlining corrective measures that protect human health and the environment from all current and future unacceptable risks due to past releases of hazardous constituents. These SWMUs will be formally closed as part of the Final Remedy under the VCAA.
- SWMU 10 consists of the operating West Ravine Leachate and Storm Water collection sump (Figure 1). The sump was installed in 1982 as an interim measure to prevent the discharge of contaminated storm water and leachate off of the property. Currently, EMD plans to close and remove the existing sump and install a new and improved system that will be designed and constructed as a component of the final corrective measures for the facility.
- The two AOCs identified in the PA/VSIs (AOC 1-Feedstock Drum Storage Area; and, AOC 2 Process Air Release Controls) are currently in compliance with applicable rules and regulations. There was no need to investigate these AOCs during the RI/FS, and no need to

investigate it as part of the RCRA voluntary agreement. No new AOCs have been identified at the facility since the 1990 PA/VSI report.

References

Ohio Environmental Protection Agency, 2004, EMD Chemicals Inc. Feasibility Study, Final Report, Investigation and Mitigation of Hazardous Waste Sites Level-of-Effort Contract Mobilization Order No. 531-01.

PRC Environmental Management, Inc., 1990; Preliminary Assessment/Visual Site Inspection, EM Science, Cincinnati, Ohio, Final Report; Work Assignment No. CO5087.

The Payne Firm, Inc., 1996, Remedial Investigation Report for the EM Science Site, Cincinnati, Ohio, Project No. 100.50.10.

TABLE 1: Conditions at RCRA Solid Waste Management Units and Areas of Concern
EMD Chemicals Inc. Norwood, Ohio Facility
December 22, 2004

SMWU or AOC Identified in	Descriptive Name	Operational Dates	RCRA Regulated Unit as Presented in the PA/VSI (PRC, 1990)	Evidence of Release as Presented in the PA/VSI (PRC, 1990)	RI/FS Investigation Soil Borings	RI/FS Investigation Monitoring	Chemicals Related to SWMU/AOC	Regulatory Status	Further Action in the Form of Investigation or Remedial Action	RI/FS Investigation Monitoring
PA/VSI Identified SWMUs Where A Release Has Not Occurred										
SWMU 1	Building 4 Hazardous Waste Storage Area	Mid-1960s to 1991	No; unit was used as a less-than 90-day hazardous waste storage area.	None	None Required	None Required	Not Applicable	Inactive. Closure will be performed under the VCAA.	The area where the former SWMU was located was investigated during the RI/FS as part of SWMU #9. The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action.	None Required
SWMU 2	Main Hazardous Waste Storage Area	Late 1970s to present	No; unit was formerly greater than 90-day hazardous waste storage area. The unit was closed in 1982 and put back into operation in 1982 as a less than 90-day hazardous waste storage area.	None	None Required	None Required	Not Applicable	Active. Formal closure of the greater than 90-day storage area (as operated before closure of the unit which was performed by EMD on July 2, 1982) needs to be obtained from the U.S.EPA. Currently operating under less than 90-day storage area rules.	No investigation or remedial action needed.	None Required
SWMU 3	pH/Neutralization System	1982 to present	No; unit is a wastewater treatment unit erroneously entered as a hazardous waste treatment unit on the 1982 Part A application.	None	None Required	None Required	Not Applicable	Active; treated water is discharged to a permitted MSD sanitary sewer.	No investigation or remedial action needed; continue monitoring discharge as required by MSD permit.	None Required
SWMU 4	New Tank Farm and Tanker Transfer Area	1989 to present	No	None	None Required	None Required	Not Applicable	Unit is active but should not be classified as a SWMU. Declassification requested by EMD.	No investigation or remedial action needed.	None Required
SWMU 5	Waste Distillate Collection System	1972 to present	No	None	None Required	None Required	Not Applicable	Active	No investigation or remedial action needed.	None Required
PA/VSI Identified SWMUs Where A Release Occurred										
SWMU 6	Building 10 East Ravine Discharge and French Drain	East Ravine discharge was from the early 1957 to 1970; the French Drain was put into operation in 1989 to present.	No	Leaks from the process sewer that ran from Building 10 to the East Ravine and discharged into the sanitary sewer.	VZ9305, VE310, VZ9304, VE311, VZ332, VE402/VZ407, VZ331	MW35, MW5, MW14, P1, MW16, MW23, MW18, MW43A, MW15, MW15B, MW17, MW42, MW41, MW44, MW501	VOCs	Inactive. To be managed under the VCAA.	Investigation completed during the RI/FS*; The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action..	MW35, MW5, MW14, P1, MW16, MW23, MW18, MW43A, MW15, MW15B, MW17, MW42, MW41, MW44, MW501
SWMU 7	Building 10 Floor Drain, Sewer Line and West Ravine Discharge	1952 to 1957	No	Leaks from the process sewer that ran from Building 10 to the West Ravine; fill materials in the West Ravine that contain chemical wastes.	VE310, VZ319, VZ320, VZ321, VZ9305, VZ321, VE313/VZ9306, VZ9307, VZ9308/VE315, VZ330	MW31A, MW31B, MW31C, MW31D, MW35, MW4, MW6, MW8, MW9, Outfall	VOCs, SVOCs, metals	Inactive. To be managed under the VCAA.	Investigation completed during the RI/FS*; The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action..	MW31A, MW31B, MW31C, MW31D, MW35, MW4, MW6, MW8, MW9, Outfall
SWMU 8	Old Tank Farm and Waste Disposal Pit	1958 to 1990	No	Spills and releases from tanks and the pit.	VE315, VZ327, VZ329, VZ9308, VE508	MW9, MW24, MW503, MW502A, MW502B	VOCs, SVOCs, metals	Inactive. Closure will be performed under the VCAA.	All tanks were removed in 1990; investigation completed during the RI/FS*; The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action.	MW9, MW24, MW503, MW502A, MW502B
SWMU 9	Building 4 Trench and Discharge System	Mid-1950s to 1967	No	Discharges to the ground surface at the north and south sides of the building.	VE314/VZ323, VE316/VZ324, VE509, VZ329, VZ327, VZ115	MW302, MW24, MW27, MW502A, MW502B	VOCs	Inactive. To be managed under the VCAA.	Investigation completed during the RI/FS*; The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action.	MW302, MW24, MW27, MW502A, MW502B
SWMU 10	West Ravine Leachate and Storm Water Collection Sump	1982 to present	No	Installed as an interim measure to capture releases from the West Ravine	VE316, VE319, VE520, VE521, VE522, VE523, VE524, VZ328, VZ501, VZ502, VZ503, VZ504, VZ505, VZ506, VZ507, VZ513, VZ514	MW19A, MW19B, MW19C, MW503, MW504, MW505A, MW505B, MW507, MW508	VOCs, SVOCs, metals	Active; water collected in the sump is pumped and treated at the pH/neutralization system.	Investigation completed during the RI/FS*; The need for remedial action will be evaluated in and around SWMU area during the RCRA Corrective Action..	MW19A, MW19B, MW19C, MW503, MW504, MW505A, MW505B, MW507, MW508
Post-PA/VSI Identified SWMUs										
SWMU 11	Building 17 Hazardous Waste Storage Area	1994 to present; post PA/VSI	No; less than 90-day hazardous waste storage area.	None	None Required	None Required	Not Applicable	Inactive. To be managed under the VCAA.	No investigation or remedial action needed.	None Required
PA/VSI AOCs										
AOC 1	Feedstock Drum Storage Area	Early 1950s to Present	No	None	None Required	None Required	Not Applicable	Active. Monitoring conducted under Hamilton County Regional Air Pollution Control Agency oversight.	No investigation needed; remedial action anticipated in and around area to address SWMU 7 releases.	None Required
AOC 2	Process Air Release Controls	Early 1950s to present	No	Four uncontrolled air emission events that occurred in the early 1980s. The releases consisted of acids and sodium hydroxide.	None Required	None Required	VOCs	Active. Monitoring conducted under Hamilton County Regional Air Pollution Control Agency oversight.	No investigation or remedial action needed; plant has necessary controls in place to manage permitted air emissions from the Facility.	None Required

*RI/FS Information: Payne Firm, 1996, Remedial Investigation Report for the EM Science Site, The Payne Firm, Inc., Cincinnati, Ohio.
Form of Information: Tables and Figures for data collected during the Ohio EPA Consent Order remedial investigation from 1993 to 1996.
Report Location of Results: Appendix K (Site Specific Parameter List Analytical Data: Figure 4-1 (Areas of Soil Contamination); Figures 4-2 through 4-13 (Concentrations of contaminants detected in soil and ground water).



C: T. Terp 10/14/88



Re: Hamilton County
Hazardous Materials
EM Science
OHD 086 438 538
HW 05-31-0626

Ms. Mary Backherms
EM Science
2909 Highland Avenue
Cincinnati, Ohio 45212

October 20, 1982

Dear Ms. Backherm:

On 17 October 1982, I conducted an inspection of your facility to ascertain your compliance with the requirements of 40 CFR 262 and OAC 3745-52.

A review of your manifests shows material being removed from your facility within the 90 day limit. The drum storage area is in compliance and the drums are being marked with the accumulation start date.

I am recommending approval of your request for closure and the redesignation of your facility to non-TSD generator.

Sincerely,

A handwritten signature in cursive script, appearing to read "David P. Duell".

David P. Duell
Hazardous Materials Management

DPD:lmr

cc: Kathy Homer, USEPA/Region V
cc: Regional Administrator USEPA
cc: Paula Cotter, OEPA/DHMM
cc: Bob Fragale, HWFAB